FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-8024
MOSES LAKE (LARSON WWTP)

SUMMARY

The Department of Ecology is proposing to reissue a State Waste Discharge permit to the City of Moses Lake. The permit and effluent limitations are crafted for the protection of the groundwater. The city constructed a new Biolac treatment plant at the Larson site during the latter half of 2002.

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. **ST 8024.** The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the State include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Drinking Water Office of the Washington State Department of Health and by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D--Response to Comments

GENERAL INFORMATION	
Applicant	City of Moses Lake
Facility Name and Address	Larson Wastewater Treatment Plant
Type of Existing Treatment System:	Extended Air Activated Sludge (Biolac), with Ultraviolet Light Disinfection and Infiltration Basins.
Discharge Location	Latitude: 47° 11' 14" N Longitude: 119° 17' 27" W
Contact at Facility	Name: Dick Leishman Telephone #: (509)766-9229
Responsible Official	Name: Tim Varney Title: Public Works Superintendent Address: P.O. 1579, Moses Lake, WA. 98837-0244 Telephone #: (509)766-9225 FAX # (509)766-3615

BACKGROUND INFORMATION

DESCRIPTION OF THE COLLECTION AND TREATMENT SYSTEM

HISTORY

The Larson Wastewater Treatment Plant is located on a 34 acre site southeast of the Grant County Airport. In 1943, a primary treatment plant was constructed on the site to serve the Larson Army Air Corp Base including base housing. In 1967, the City of Moses Lake acquired the Larson WWTP and responsibility for ongoing operation and maintenance of the facility. In the early 1970's the city upgraded the original primary wastewater treatment facility. In 2002, the City constructed a new extended aeration/ activated sludge (Biolac System) plant to meet current Ground Water Quality Standards.

COLLECTION SYSTEM STATUS

The collection system has five (5) lift stations in it. I/I is not a problem for the collection system; perhaps due to the porous soil and low rainfall. Portions of the collection system have maintenance problems due to deterioration and root penetration. What infiltration and inflow does exist is being addressed through systematic inspection, repair, maintenance and occasional replacement of portions of the collection system.

TREATMENT PROCESSES

The existing WWTP consists of: 1) a headworks consisting of a grit chamber, a mechanical screen, and a composite sampler; 2) one aeration basin 3) two clarifiers 4) two HDPE lined sludge wasting basins 5) two concrete lined sludge drying basins 6) three rapid infiltration basins 7) one concrete pad for biosolids storage and 8) housing for the ultra-violet disinfection system, control room, workshop, and blower room and 9) an office building with laboratory.

The Biolac System has an integral clarifier for sludge separation and recycle.

Distribution System (Infiltration Basin)

Each of the three infiltration basins is 122 feet wide by 198 feet long. The design flow is 0.75 mgd. Although, water does not pond up in the basins and often does not spread over the entire infiltration basin, the basins are rotated monthly. Soils under the basins are extremely permeable. The site is underlain by flood sands and gravels 57 to 68 deep, which in turn overlie basalt. An unconfined aquifer, approximately 10 feet thick is at the bottom of the gravel layer, above the basalt.

RESIDUAL SOLIDS

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings). Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill. This is a new plant, therefore production of waste sludge from the clarifiers has not yet occurred. Sludge produced will be placed in two concrete lined drying basins, then placed on a concrete storage pad for final drying prior to transport to a designated land application site under permit from the Department of Ecology Solid Waste Services Program.

GROUND WATER

The following is a brief summary of the geologic/hydrogeologic information presented in reports by Shannon & Wilson, Geo Engineers, and Wilson Engineering.

The site is underlain by four geologic units. From the ground surface down these include: 1) a thin (2 to 5 foot) layer of silty sand, 2) a thick sandy gravel flood deposit, 3) sediments of the Ringold Formation, and 4) Yakima Basalt.

The flood deposited material ranges in thickness from 57 to 68 feet. The Ringold Formation consists of a brown silty sand with lenses of clay and gravel in the vicinity of the site. A 5-foot-thick gravelly clay zone exists at the contact of the Ringold Formation and the underlying basalt. The Yakima Basalt generally consists of weathered dark gray basalt with some clay infilling.

An unconfined aquifer is located within permeable zones of the lower portion of the flood deposits, the Ringold Formation and the upper weathered portion of the basalt. The unconfined aquifer is likely recharged directly by precipitation. Thickness of the aquifer in the vicinity of the project site is highly variable, but is generally less than 20 feet thick. The upper boundary of the aquifer lies approximately 60 feet below the ground surface of the site. Ground water flows generally to the south and/or southwest in the vicinity of the site. The hydraulic gradient of the unconfined aquifer is approximately 0.0037 ft/ft. The hydraulic conductivity of the unconfined aquifer is approximately 28 feet/day.

Four groundwater monitoring wells are located in the vicinity of the treatment facility.

PERMIT STATUS

The previous permit for this facility was issued on June 20, 2001, effective July 1, 2001

An application for permit renewal was submitted to the Department on December 29, 2005 and accepted by the Department on February 1, 2006.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on March 1, 2006.

The previous permit had a permit effluent limit for flow only and the facility has not exceeded that flow. The permit also required groundwater monitoring. During 2005 the groundwater standard of 1 total coliform per 100 ml of sample has been exceeded twice at MW3. Effluent limitations protective of the receiving water are the objective of this permit.

MW 3 is the down gradient monitoring well. MW4 is the up gradient monitoring well. MW 2 is east of the down gradient monitoring well. The high coliform counts detected in MW 3 may or may not be caused by the old infiltration basin, although, another source of total coliforms is not evident.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge for the existing wastewater treatment facility was reported in the permit application and in discharge monitoring reports. The proposed wastewater discharge prior to infiltration or land application is characterized for the following parameters:

Table 1: Wastewater Characterization

Parameter	Units	Concentration (average)	Concentration (range)
pH	standard units	7.23	6.82 to 8.24
CBOD5	mg/L	2.	1 to 6
Nitrogen (total ammonia) as N	mg/L	1.38	<0.07 to 18.9
Nitrogen (total nitrate) as N	mg/L	2.81	<0.07 to 10.50
Nitrogen (total Kjeldahl) as N	mg/L	2.3	<0.03 to 19.2
Total Dissolved Solids	mg/L	418	360 to 467
Fecal Coliform	#/100 mL	3	<1 to 18

SEPA COMPLIANCE

SEPA compliance was obtained during preparation of the facilities plan which was approved by the Department of Ecology on June 12, 2000.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum requirements to demonstrate compliance with the AKART standard are derived from the *Water Reclamation and Reuse Standards*, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The permit also includes limitations on the quantity and quality of the wastewater applied to the infiltration basins that have been determined to protect the quality of the ground water. The approved engineering report/facilities plan includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the

beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 2: Ground Water Quality Criteria

Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	1000 mg/L**
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Manganese	0.05 mg/L
Total Iron	0.3 mg/L
Toxics	No toxics in toxic amounts

**The TDS criteria is a specific change to the groundwater standards made by the Department of Ecology and Department of Health at local request.

The Department has reviewed existing records and is unable to determine if background ground water quality is either higher or lower for all of the criteria given in Chapter 173-200 WAC. Therefore, the Department will use the criteria expressed in the regulation in the proposed permit when appropriate. Nitrates are one criterion where background data is adequate to perform statistical analysis. The tolerance limit based on a statistical analysis of the background water quality data for nitrates is 3.176 mg/L. The effluent limitations are anticipated to be protective of the background water quality. The discharges authorized by this proposed permit are not expected to interfere with beneficial uses. Current effluent limitations will remain in place until the end of this permit cycle when the effluent limits will be re-evaluated to determine if they are adequate for protection of background ground water quality.

Pollutant concentrations in the proposed discharge exceed ground water quality criteria with technology-based controls which the Department has determined to be AKART.

Limits based on ground water criteria water quality based limitations for nitrogen, nitrates, and total coliform have been established and are applied at the end of treatment. Although, the suggested design monthly average effluent standards for the facility regarding Total Nitrogen is 8 mg/L, the Engineering Report lists the design goal for Total Nitrogen to be 6.8 mg/L assuming 30% denitrification in the soil column in order to meet anti-degredation for nitrates in ground water The resultant effluent limits are shown in Table 3. The biological kinetic required for nitrification and denitrification shown in Table 3 result in permit limitations more stringent than standard secondary treatment for BOD, TSS and ammonia. The facility plan proposed a limit of 50 fecal coliforms per 100 mL as the reasonable limit based on the use of 50 FC in other permits where dilution and depth to groundwater indicated a likelihood of pathogen die off and adequate protection of the groundwater standards.

The groundwater quality based effluent limitations apply for BOD, TSS, ammonia, TKN, Nitrate, disinfection and pH. Technology based effluent limitations do not apply to the final effluent limitations in the proposed permit

COMPARISON OF LIMITATIONS WITH THE EXISTING PERMIT ISSUED JUNE 20, 2001

Table 3: Comparison of Previous and New Limits

Parameter	Existing Limits	Proposed Limits
Flow	0.75 MGD	0.75 MGD
CBOD5	10 mg/L	10 mg/L
TSS	15 mg/L	15 mg/L
TN	8 mg/L	8 mg/L
NO3	6 mg/L	6 mg/L
pH	6.5 to 8.5	6.5 to 8.5
DO	2 mg/L	2 mg/L
Fecal Coliforms	50 cfus/100 mL (daily maximum)	50 cfus/100 mL (daily maximum)

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

INFLUENT AND EFFLUENT MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

GROUND WATER MONITORING

The Department has determined that this discharge has a potential to pollute the ground water. Therefore the Permittee is required to evaluate the impacts on ground water quality. The monitoring of ground water at the site is required in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. Monitoring of the ground water at the site boundaries and within the site is an integral component of such an evaluation.

The wastewater effluent monitoring schedule and groundwater monitoring schedule includes several major cations and metals for the purpose of differentiating between chemical characteristics of the effluent, impacts to groundwater from the effluent and background ground water quality characteristics.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110).

FACILITY LOADING

The design criteria for this treatment facility are taken from the City of Moses Lake Facility Plan Addendum for Wastewater Treatment Facility Improvement (Larson WWTP) prepared by Wilson Engineering and approved by the Department on June 9, 2000. The design criteria are as follows:

Influent Loadings in Design Criteria

Monthly average dry weather flow:	0.75 mgd
Instantaneous peak flow:	1.20 mgd
Influent BOD loading:	1877 lbs/day
Influent TSS loading:	1877 lbs/day
Influent TKN loading:	219 lbs/day
Influent NH3 loading:	188 lbs/day
Influent Alkalinity loading:	1564 lbs/day

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an engineering report when the plant reaches 85% of its flow or loading capacity. For significant new discharges, the permit requires a new application and an engineering report (WAC 173-216-110[5]). Special condition S.4.C. of the permit requires the Permittee to submit annual reports comparing the actual flow and waste loadings to the design criteria for the plant.

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water pollution the Permittee is required in permit condition S6. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the local health district.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will by used by Ecology to develop or update local limits and is also required under 40 CFR 503.

PRETREATMENT

WAC 173-216-110 requires that the list of prohibitions in WAC 173-216-060 be included in the permit.

Federal pretreatment requirements in 40 CFR 403 and Sections 307(b) and 308 of the Clean Water Act apply to this facility. Therefore notification to the Department is required when pretreatment prohibitions are violated and when new sources of commercial or industrial wastewater discharge are added to its system.

An industrial user survey is required to determine the extent of compliance of all industrial users of the sanitary sewer and wastewater treatment facility with federal pretreatment regulations (40 CFR Part 403 and Sections 307(b) and 308 of the Clean Water Act), with state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC), and with local ordinances.

GROUND WATER QUALITY EVALUATION (HYDROGEOLOGIC STUDY)

In accordance with WAC 173-200-080, the Permittee prepared and submitted a hydrogeologic study for Departmental approval prior to construction of the new Biolac treatment facility. The new permit will require ongoing monitoring of the groundwater.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges) into the sewer system tributary to the permitted facility. Condition G6 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Condition G8 requires application for permit renewal 60 days prior to the expiration of the permit. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for five (5) years.

REFERENCES FOR TEXT AND APPENDICES

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology and Department of Health, 1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23. 73 pp.

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

Washington State Department of Ecology Home Page
http://www.ecy.wa.gov/
Laws and Rules web site
http://www.ecy.wa.gov/laws-rules/laws-etc.html

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on February 10 and February 17, 2006 in the Columbia Basin Herald to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

This Permit was written by Wayne Peterson.

APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

CBOD5 – The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celcius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining COBD4 is given in 40 CFR Part 136.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Soil Scientist--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C—LOCATION MAPS

APPENDIX D--RESPONSE TO COMMENTS